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AI-Driven Marketing Advancements: the perspective of AI implementation in Kazakhstani digital marketing

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Abstract

Artificial intelligence (AI) is one of the most popular topics in modern society. Rapid technological progress presents new challenges to businesses in terms of maintaining their competitiveness in the market. AI-driven marketing uses machine learning algorithms to analyze and enhance customer experience and develop marketing strategies. However, there is insufficient data and literature on this topic in Kazakhstan. This thesis aims to shed light on this gap in knowledge about AI in Kazakhstan by exploring the benefits and challenges of introducing AI into marketing and understanding how to integrate AI into their marketing strategies. The study will combine primary and secondary research methods to address these questions. The primary data collection includes a survey among companies and startups in Kazakhstan to determine their attitudes to AI and companies' willingness to use AI-based technologies. At the same time, the secondary research will review the existing literature on this topic. Therefore, we will show a developed chatbot to illustrate the capabilities of artificial intelligence. The chatbot is designed to search for books and answer users' questions, which will allow you to demonstrate a wide range of its functionality. The study's findings will provide valuable insights into the benefits of AI marketing that companies can use in their marketing strategies. The research paper will contribute to filling the gap in knowledge about AI marketing in the country.

Keywords: *artificial intelligence, machine learning, chatbots, natural language processing, digital marketing*

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1. Introduction

Nowadays, artificial intelligence (AI) is one of the innovative technologies that is used in decision-making processes and task automation. Artificial intelligence refers to a computer's ability to perform tasks, make decisions, and learn in a similar way to the characteristics of the human brain (Cambridge Dictionary, n.d.). The latest technological advances are moving humanity towards a future based on artificial intelligence, steadily and quickly introducing us to new opportunities in the digital world. "AI is just a tool that opens up new opportunities for us," concluded Gulmira Bekmanova, Director of the Department of Digital Development and Online Learning at L.N. Gumilev Eurasian National University (Mukhamediarova, 2024). AI-based technologies provide a wide range of opportunities, and companies can use AI to automate routine tasks, optimize business processes, and generate content. Introducing AI technologies into marketing strategies can be profitable, as it is one of the most promising areas for using the advances of technological progress. Nevertheless, introducing AI into marketing strategies must be thoughtful and careful since companies may encounter potential challenges and ethical considerations. Data protection, confidentiality, and respect for intellectual property and copyrights are potential challenges companies may face when introducing AI into their strategies. This study aims to analyze the potential impact of AI on Kazakhstan's marketing sphere and assess opportunities for AI integration in marketing campaigns, taking into account the growing number of scientific papers emphasizing its importance on a global scale. The conclusions drawn in these articles will explore the potential of integrating artificial intelligence in Kazakhstan.

Background of the project and its significance

In the past, most companies relied on traditional marketing approaches such as posters, radio, and television to promote their products. In that case, this may not be enough to be competitive in the modern market (Alkhayyat & Ahmed, 2022). The application of traditional approaches has limitations in terms of audience coverage and accuracy in meeting consumer needs, which leads them to lag behind in a highly competitive environment. Understanding and applying new technologies is becoming

essential for companies seeking to be competitive in the market. Field et al. depict that marketers who understand advanced technologies based on artificial intelligence and machine learning can successfully use the powerful capabilities of these technologies (2019).

Basha (2023) depicts that during globalization, AI has become “a panacea” for small businesses because it enables them to operate online globally and expand their capabilities. Adopting a similar position, Sivaraman (2023) argues that AI is a key tool that allows companies to adapt to changes and shape them. That, in turn, helps marketers make decisions based on data, improve personalization and customer interaction, and optimize marketing campaigns (Sivaraman, 2023). Implementing key trends in AI marketing, such as predictive analytics, chatbots, and personalization, will help marketers collect and analyze a large amount of information quickly and provide higher-quality content based on this data. The integration of artificial intelligence into marketing is a promising area for the following reasons: transformation of traditional approaches to interacting with consumers, effective data management process, and optimization of workflows.

Objectives of the study

The motivation for the research is due to the rapid digitalization of the economy of Kazakhstan and the fact that artificial intelligence can play an important role in improving marketing strategies and developing higher customer returns.

This research paper aims to analyze how AI-driven advancements impact marketing within the context of Kazakhstani companies. By thoroughly examining the impact of AI in marketing, this research paper strives to provide valuable insights into the integration of new technologies by enterprises in Kazakhstan, as well as to consider the potential challenges and opportunities that companies may face. Therefore, this study will demonstrate the capabilities of AI technologies through the developed chatbot. The functionality of the chatbot is designed to search for books and answer user questions, demonstrating its wide range of capabilities.

Research questions:

1. What are the main success factors that Kazakhstani companies seek to implement AI-based marketing strategies?
2. What are the main factors and problems that businesses in Kazakhstan might face when implementing marketing tools based on artificial intelligence in their digital marketing initiatives?
3. How does the regulatory framework of Kazakhstan affect the implementation and use of AI-driven marketing technologies, and what legal framework regulates their use in the market?

Hypotheses:

H1: AI chatbots are effective tools for businesses to improve customer satisfaction and operational effectiveness.

H2: Implementation of AI technologies into marketing strategies has a positive impact on effectiveness and competitiveness among companies in Kazakhstan.

2. Literature review

2.1 The rise of AI in marketing

AI has already played a significant role in people's lives, shaping their choices and preferences. Artificial intelligence helps make human daily life much more efficient, and as technologies continue to evolve, AI's influence will continue to expand in the future. In a 2023 study, Sivaraman highlighted that artificial intelligence is a transformative force that affects many areas of human life. According to a Chui et al. (2023) report, artificial intelligence technology is transforming a wide range of industries, especially in sales, marketing, customer service, and software development, which can benefit enormously from using AI. Since many achievements in artificial intelligence are now in the public domain, meaning it is available to anyone, it makes it more attractive to companies (Collins et al., 2021). Thus, introducing AI into companies' strategies can take the business to a new level.

Chui et al. (2023) reported the potential contribution of artificial intelligence to the global economy, which is estimated in the range of 2.6 trillion to 4.4 trillion dollars per year. One of the main reasons for the growth of investments in the development of AI is effective communication between businesses and consumers, which helps to increase their marketing competence (Alkhayyat & Ahmed, 2022). According to OpenAI (2023), an AI research company, over 80% of Fortune 500 companies implemented ChatGPT, which is an accessible and popular tool for both individuals and businesses. Canva, Carlyle, Estée Lauder, PwC, and others were among the first companies to use ChatGPT Enterprise to communicate, quickly find answers to business questions, and help with creative work OpenAI (2023).

Mari (2019) determined that companies can benefit directly by actively implementing artificial intelligence strategies and indirectly using existing technologies. In the case of the former, companies can create AI solutions or purchase them from third parties. In the second case, marketers do not have to invest considerable resources in AI; they can already use it through available resources (Mari, 2019). To determine the affordability of AI, Murár and Kubovics (2023) conducted a study and found positive

findings. As noted by the authors, AI tools are far more cost-effective and range from $2 up to $249 monthly, making it affordable to conduct marketing needs (Murár & Kubovics, 2023).

Artificial intelligence facilitates decision-making by helping businesses minimize the time and resources spent on monotonous and repetitive tasks. Mari (2019) suggests that companies should allow AI to perform routine tasks and make it the primary strategy in modern marketing. This approach will allow marketers to focus more on complex tasks that require human interaction (Mari, 2019). At the same time, consumers can also take advantage of AI. They can receive personalized service and immediate response to their requests.

2.2 Key trends in AI-Driven marketing

The growing volume of data poses significant challenges for marketers. At the same time, modern consumers place higher demands on interaction content personalization, which complicates the tasks facing marketing specialists (Mari, 2019). In his research, Mari identifies three main features of artificial intelligence technology: prediction of consumer behavior, anticipation of consumer needs, and hyper-personalized messages (2019). In 2023, Basha conducted an exploratory study identifying several vital benefits of AI-driven marketing, including high efficiency, time savings, higher conversion and return on investment rates, a deeper understanding of customer data, and more (Basha, 2023). Based on the previous studies, we will explore predictive analytics, customer engagement and personalization, and chatbots as the key trends in AI-driven marketing.

2.2.1 Predictive Analytics

Predictive analytics is one of the valuable tools that companies can incorporate into their marketing strategies. Artificial intelligence in predictive analytics will help determine future sales trends and the effectiveness of marketing campaigns (Mailchimp, n.d). According to Paschen et al. (2019), artificial intelligence can analyze various types of customer data, including information about purchases, online activity, and their characteristics, by using machine learning and predictive analytics algorithms. Analyzing these data helps build customer profiles to improve interaction with them and attract new ones (Paschen et al., 2019). This point of view is supported by Sivaraman (2023), who

argues that by analyzing historical data, marketers can better predict customer behavior and segment the audience, resulting in increased return on investment (ROI) in advertising campaigns. Companies that use machine learning in predictive analytics can transform data into meaningful customer interactions and create unique products (Mari, 2019).

2.2.2 Customer engagement and personalization

Deveau et al. (2023) depicted three areas of marketing, in particular productivity, customer experience, and growth, on which artificial intelligence can have the most significant impact. Several authors have reported analyses of personalization trends in marketing, highlighting the need to increase customer satisfaction (Ahmed & Alkhayyat, 2022; Mari, 2019; Sivaraman, 2023). Ahmed and Alkhayyat (2022) identify that in the future, artificial intelligence will help marketers establish personal connections with customers and understand their emotional state. Marketers can build marketing strategies more effectively based on customer preferences about the product (Alkhayyat & Ahmed, 2022). Likewise, Sivaraman (2023) holds the view that personalization is the key motivation for the introduction of artificial intelligence in marketing. In his seminal article, Sivaraman points out that AI algorithms can analyze customer's preferences to provide tailored content and recommendations. The author draws attention to the fact that consumers prefer to cooperate with companies that understand their needs; this level of personalization leads to increased customer satisfaction, conversion, and brand loyalty (Sivaraman, 2023).

The evidence of personalization trends can be clearly seen in the case of Coca-Cola. In 2023, the company released a new campaign demonstrating how artificial intelligence is used in their innovative marketing strategies. The brand's new campaign, Coca-Cola Y3000 Zero Sugar, was developed in collaboration with human and artificial intelligence. They obtained opinions from fans from all over the world with the help of AI to create a unique taste of the Y3000 (Coca-Cola, 2023). The Coca-Cola campaign is a good illustration of creating a customer experience. Therefore, they implemented AI in their iconic New Year advertising with Santa Claus, where consumers can visit the website CreateRealMagic.com and create personalized digital postcards. Customers can download postcards,

send them to their family and friends, or share them on social media. Coca-Cola used ChatGPT-4 for text generation and DALL-E for image production based on the text (Coca-Cola, n.d.). This case study demonstrates how AI is used for marketing strategies by creating a unique customer experience that helps deepen relationships with consumers.

2.2.3 Chatbots

Another useful tool in marketing is chatbots driven by AI technologies. Chatbots are defined as programs that simulate human conversation (Skillfloor, 2023). According to a Deveau et al. report (2023), AI chatbots can automate responses to most customer requests, which improves the quality and efficiency of interactions. The implementation of chatbots allows the company to focus on requests that cannot be done without a human operator (Deveau et al., 2023). This finding was also reported by Sivaraman (2023), who stated that chatbots provide assistance to customers in a short time, thereby improving the quality of customer service (Sivaraman, 2023).

Several studies thus far have linked the important role of natural language processing (NLP) in the development of chatbots, emphasizing that NLP techniques are used to ensure accurate responses and contribute to more effective customer satisfaction (Sugisaki, 2019; Sanjaya et al. 2023; Sivaraman, 2023). Amazon Web Services (AWS) defines natural language processing (NLP) as a technology based on machine learning with the ability to analyze text and interpret and understand human language (Amazon Web Services [AWS], n.d.). Sanjaya et al. (2023) point out that the effectiveness of a chatbot is determined by its ability to simulate a human conversation and understand users' intentions. They also claim that the level of user engagement increases when they feel that they are communicating with real people, and not with an insensitive robot (Sanjaya et al., 2023). Similarly, Sivaraman notes that NLP allows marketers to gain useful information from customer feedback, improving their communication and product offerings (Sivaraman, 2023).

Oftentimes, the concept of chatbots is interconnected with prompt messages. Murár and Kubovics (2023) define prompts as guidelines that allow chatbots to generate the most accurate response. The more accurate the request is, the better and more appropriate the response from the

chatbot will be (Murár & Kubovics, 2023).

Nevertheless, there are some challenges to consider while using AI-driven chatbots. The main limitation of AI-driven chatbots, however, is that chatbots still require the participation of human staff to solve questions that chatbots cannot answer (Sanjaya et al. 2023). Therefore, it is important to take into account data protection, since the security of users' privacy should take precedence over the collection of information (Skillfloor, 2023).

2.3 Situation in Kazakhstan

The economic situation of Kazakhstan is the most extensive among the countries of Central Asia. However, Kazakhstan implemented the Digital Kazakhstan program to be competitive enough globally. To accelerate the pace of development of the economy of Kazakhstan and improve the quality of life of the population, as well as to transition to a new trajectory as the digital economy of the future (Elektronnoe Pravitelstvo Respubliki Kazakhstan, n.d.). This program, designed from 2018 to 2022, will give additional impetus to the technological modernization of the country's main industries, creating conditions for large-scale and long-term labor productivity growth. (Elektronnoe Pravitelstvo Respubliki Kazakhstan, n.d.).

2.3.1 The importance of digital transformation

Over the past five years, Kazakhstan has actively begun to consider the introduction of advanced technologies. As the President of the Republic of Kazakhstan Kassym-Jomart Tokayev mentioned in his annual message to the people, the republic should become an IT country (Tadviser, 2024). This perspective is closely linked to the state's strategic goal of developing the digital economy and strengthening Kazakhstan's position as one of the world leaders in high-tech sectors such as e-government. The desire for innovation and the introduction of advanced technologies in all spheres of society testifies to a deep understanding of the role of digitalization in achieving sustainable economic development and improving the population's quality of life.

In 2023, Bagdat Musin, the former Minister of Digital Development, Innovation and Aerospace Industry of the Republic of Kazakhstan, noted the need to rethink the prospects for turning the company

into production processes, management principles, customer relationships, and common approaches to business. Musin emphasizes that these technologies can change the social order, automate work processes, and create economic value on a large scale (Kenbaeva, 2024).

In 2024, a critical meeting was held with the participation of the Minister of Digital Technology and leading experts in the field of information technology. At this meeting, attention was focused on the significant development of the IT industry for sustainable economic growth and for the strategic progress of the state on the world stage. The meeting clearly shows the government's intention to gain a foothold among the world leaders in this field (Kenbaeva, 2024).

2.3.2 Digital Bridge 2023

The strategic vision of Kazakhstan's digital transformation outlined in the Digital Kazakhstan program marks a significant commitment to using technology for national development. This section should delve into the origins and goals of Digital Kazakhstan, outlining how the initiative aims to increase digital literacy, improve public services through digitalization, and promote the development of an innovative economy.

Next year, Kazakhstan managed to stand out and launch the Digital Bridge 2023 program. According to the Head of state Kassym-Jomart Tokayev, the interest in the event was a confirmation that Kazakhstan holds a strong position as a leading center of digital and fintech technologies in the Eurasian space (Satubaldina, 2023). It is worth noting that the introduction of AI in Kazakhstan has only positive aspects. Yana Ten, a participant of the Astana Hub and co-founder of the ZebraEye medical startup, states that AI is applicable in almost all spheres (Kazantseva, 2023). The introduction into the economic environment is not the end of all AI capabilities, and it is only a matter of time before it is integrated into the medical environment.

The Digital Bridge initiative promotes AI-based marketing in the country. One of Kazakhstan's most popular areas is the advertising sector, which uses new technologies. The first original collaboration was with the Kazakh car manufacturing company Allur. In partnership with creative director Alexey Leibovich and graphic designer Riz Esentaev, they created an advertising video using

AI for the first time in Central Asian countries. These technologies allowed the company to emphasize its readiness for new things to change consumer perceptions (Narimbetova, 2023).

Citrix's Kazakhstan outdoor advertising campaign demonstrated this transition from traditional advertising methods. Using AI as a cognitive tool in the visual, they released an advertisement for Freedom Holding Corp. under the name "Fashion Portfolio" (Alieva, 2023).

In addition to advertising, AI works in the country's larger organizations, such as the banking system. This fact was emphasized by Nariman Mukushev, Deputy representative of Halyk. In his interview on “How AI affects the financial sector,” he said that the company always supports a personalized approach using artificial intelligence analysis. He noted that huge amounts of data that can be processed only with the help of AI can be converted into assets and sources of income. During one of the events at Digital Bridge, it was noted that this process could also be used at a higher level to benefit at a significantly higher level (Rakhimbay & Yesimseyitov, 2023).

3. Methodology

3.1 Description of the methodology used in the project

The current study uses qualitative research methodology in order to gain insights into the implementation of artificial intelligence in the Kazakhstan market. Qualitative methods offer an effective way of in-depth understanding of the current situation of AI usage in Kazakhstan, its potential advantages and challenges in the Kazakhstani market, as well as the potential application of AI in marketing strategies. The analysis of an open-ended question will be done using the thematic analysis method.

3.2 Research design and approach

The survey was created using Google Forms software to collect the data. The software was chosen due to its simplicity, accessibility, and well-organized data collection. The survey was sent via professional networks such as Outlook and Gmail. The questionnaire was designed in such a way that

participants could answer closed questions and one open-ended question to share their opinions on the topic.

3.3 Data collection and analysis methods

The participants were selected from among the companies and startups in Kazakhstan. Prior to conducting the survey, participants' consent was obtained. The participation in the survey was completely voluntary and anonymous. The survey's questions included 8 closed-ended questions and 6 questions measured on a 5-point Likert Scale, and 1 open-ended question. The Likert scale was used to obtain information about the respondents' attitudes to the implementation of artificial intelligence and its impact on the market. The last question of the survey was an open-ended question which was optional to answer. The question was designed to obtain respondents' opinions, and ideas and share individual experiences.

4. Analysis and Results

We contacted various companies and startups in Kazakhstan to conduct a survey on AI. The questionnaire was completely anonymous and voluntary. A total of 71 (N=71) respondents participated in the survey, of which 26 answered an optional open-ended question.

In response to Question 1, 'Are you familiar with the artificial intelligence (AI) concept?', around 41,6% of respondents reported that they were familiar with it, and 36% were very familiar with it. Only 2,2% of respondents stated that their knowledge level was low or very low. According to these data, we can infer that most of the survey participants demonstrated a good understanding of artificial intelligence (AI), which can be useful for further analysis.

Most respondents (96%) reported their experience using AI-powered applications, such as ChatGPT, Siri, and Google Assistant. This indicates that the high percentage of such technologies correlated with their widespread use among participants and also may indicate the significant impact of these technologies on their daily lives.

Participants were asked if they were willing to use AI-powered tools in their marketing

strategies in the future (Figure 1). Of all the participants, 54.9% answered "very likely," and 33% answered "likely." Only 1.1% of the participants stated that they were not likely to use it at all.

Figure 1

How likely are you to explore AI-powered tools for your marketing strategies in the future?

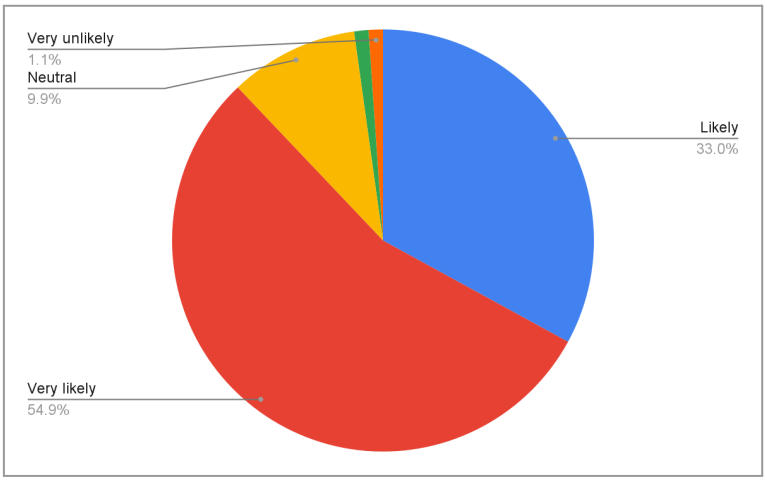


Figure 2 below shows respondents' opinions on whether artificial intelligence is necessary for competitiveness in Kazakhstan. The majority of participants (around 86%) agreed with the statement, indicating their belief that integrating AI is necessary to increase the competitiveness of companies in the Kazakh market. On the other hand, about 14% of respondents disagreed with the statement, expressing their skepticism about whether artificial intelligence is needed to improve competitiveness.

Figure 2

Do you believe that the use of artificial intelligence is necessary for competitiveness in Kazakhstan?

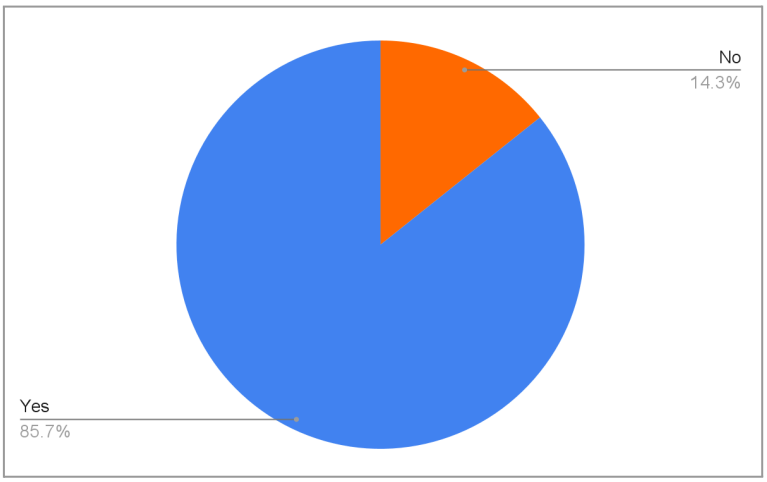


Figure 3 shows the opinions of participants on what impact AI integration could have on the competitiveness of companies in the Kazakhstani market. Based on the findings more than half of respondents (about 61%) believe that artificial intelligence will positively impact businesses' competitiveness. On the other hand, a small proportion of those surveyed feel that it will have a negative impact, while around 13% see a neutral impact.

Figure 3

In your opinion, what impact AI integration could have on the competitiveness of companies in the Kazakhstani market?

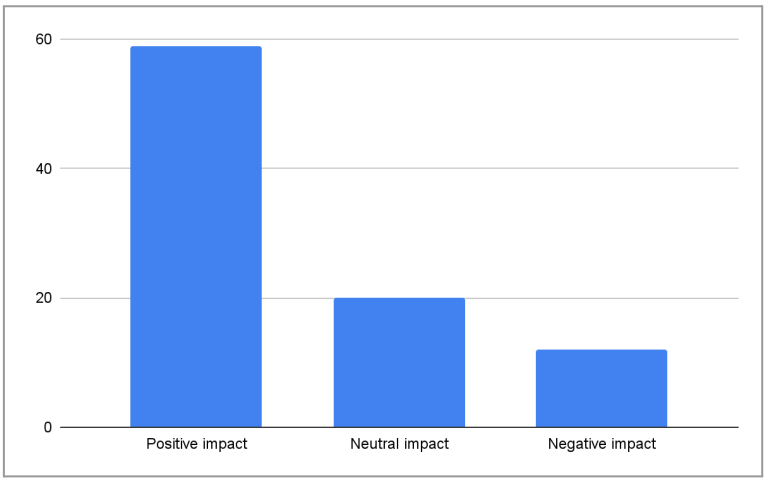
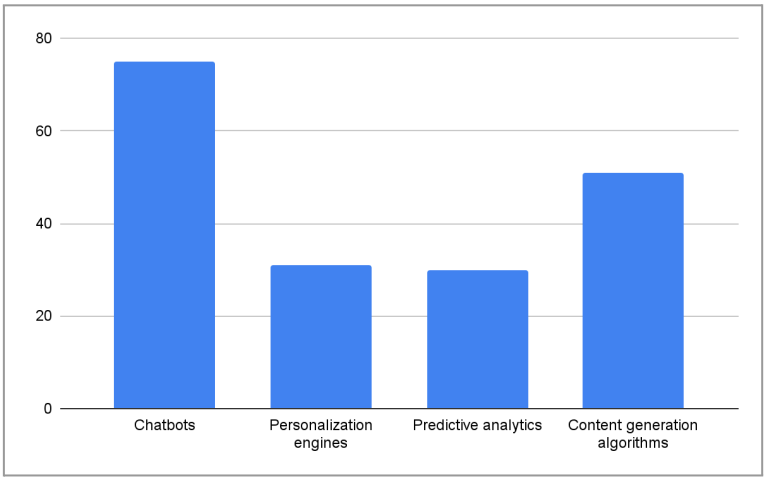


Figure 4 demonstrates which AI-based tools companies use or plan to use in their marketing strategies. The majority of participants, 82% of the respondents, chatbots (roughly 83%) were the most popular among all AI-based tools, followed by content generation (over 53%) and predictive analytics and personalization (roughly 33% each). From the chart, the most significant demand is for chatbots and content generation as AI tools.

Figure 4

Which of the following AI-powered tools do you currently use or plan to use in your marketing strategies?



Participants noted the potential benefits of integrating artificial intelligence in improving marketing effectiveness. A high percentage of respondents reported increased productivity (almost 74%), cost reduction (just over 59%), enhanced targeting capabilities, and improved customer engagement (50% and 51%, respectively).

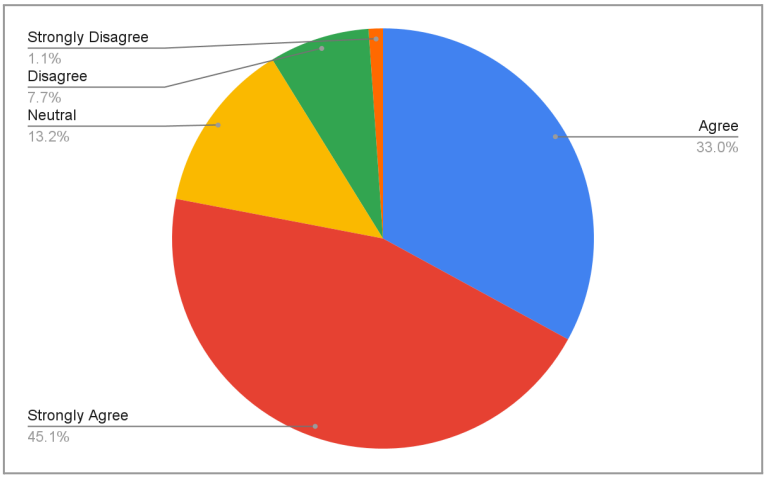
When asked about the primary obstacles preventing the introduction of artificial intelligence in Kazakhstan, most respondents indicated a need for more understanding of AI among the public and organizations (just over 76%). The next significant issue was the lack of qualified specialists (almost 56%). Lack of sufficient funding and investment and concerns about privacy and security were also identified as significant obstacles (around 54.5% respectively). Moreover, respondents depicted a lack of support from the state (about 30,7%) and resistance from stakeholders (roughly 27,3%) as obstacles.

To the question "How likely are you to invest more resources into AI integration for your marketing strategies?" around 44% responded "likely", one-third of all reported neutral, and only (around 4.5%) stated, "unlikely."

Figure 5 below demonstrates to what extent participants agree that government support is essential for introducing AI in Kazakhstan's digital marketing. While a minority (approximately 8%) expressed disagreement with the statement, the majority agreed that support from the state was essential (around 45% strongly agree and 33% agree).

Figure 5

Is government support important for the introduction of artificial intelligence technologies in Kazakhstan's digital marketing?



The results show that confidentiality and data protection are the most important ethical considerations when implementing artificial intelligence in marketing strategies, according to 76.4% of respondents. The second most important factors are preventing the misuse of artificial intelligence for manipulation or disinformation and transparency of AI decisions (57.3% and 56.2%, respectively). In contrast, the least important factors are respect for intellectual property and copyrights (43.8%).

In the final part of the survey, 26 (N=26) respondents completed an optional open-ended question about what artificial intelligence will mean for marketing companies, consumers, and society in the long run. Five main themes were discovered in the questionnaire: increased productivity, improved customer interaction, content generation, and unemployment.

5. Discussion

The purpose of this study was to gain a better understanding of the current implementation of AI technologies and their potential among companies and startups in Kazakhstan. The results of this study confirm the hypotheses that AI chatbots are effective tools for businesses to increase customer

satisfaction and operational efficiency, as well as the positive impact of artificial intelligence on the competitiveness of companies.

Firstly, the results of the study imply that the knowledge and experience in using AI among respondents indicate high awareness. This confirms a positive correlation between the understanding of AI and the willingness of companies to integrate AI into their business strategies. The data suggests that the higher the level of awareness and understanding of AI, the more companies are willing to use these technologies in their activities.

Therefore, the participants who already have experience using AI-based applications such as ChatGPT, Siri, and Google Assistant are likely to be more open to integrating it into their business processes. This can be explained by the fact that respondents better understand the benefits and potential risks associated with the introduction of artificial intelligence, as they understand the potential benefits that these technologies bring to their daily lives. Thus, companies can increase efficiency and improve customer experience by leveraging AI-driven advancements.

Our findings highlight that chatbots are one of the popular AI-based tools among participants to use in their marketing strategies. There are several reasons for the popularity of chatbots among companies: 24/7 support, and immediate and personalized responses. These results reflect those of Haristiani (2019) and Sugisaki (2019) who also found that chatbots are cost-effective and enhance user experience. This finding confirms the first hypothesis (H1) that chatbots are popular and effective tools to use in marketing.

Furthermore, the thesis' findings aligned with Basha's (2023) research results, where the use of AI in marketing strategies increases the conversion rate and improves the understanding of consumer data. The results of the current study highlight the significant benefits of integrating artificial intelligence. Respondents noted that using AI significantly improves productivity by optimizing processes. Therefore, the use of AI has economic benefits of using AI by reducing costs; companies optimize advertising budgets through precise targeting and personalization of marketing campaigns. This, in turn, promotes deeper interaction with customers, increasing their satisfaction and brand

loyalty. These values correlate favorably well with the Mckinsey report and further support the idea that companies investing in artificial intelligence significantly increase profits and return on sales (Deveau et al, 2023). According to the McKinsey report, companies investing in artificial intelligence technologies increase “their profits from 3 to 15 percent, and return on sales from 10 to 20 percent” (Deveau et al, 2023).

Thus, the results confirm the second hypothesis (H2) that the integration of artificial intelligence into marketing not only increases operational efficiency but also strengthens the competitiveness of companies by improving customer interaction, which is crucial for their successful development.

During the study, participants were asked what potential challenges might occur while implementing AI into business activities, and possible ethical considerations that might arise during this process. One of the major obstacles to the implementation of AI is the necessity for a deeper understanding of AI among the public and organizations. This finding may be explained by the idea that even though participants have a general awareness of AI technology, this might be still insufficient to apply AI to business strategies. In other words, there are higher possibilities of privacy risks that can arise when AI collects and stores data without the informed consent of users (Hermann, 2022). This finding highlights the importance of protecting personal information and maintaining consumer trust when introducing AI in marketing.

Therefore, the need for more qualified specialists was the next important issue, which indicates a serious shortage of labor necessary for the development, implementation, and maintenance of AI technologies. In order to overcome this problem it is required to focus on educating people that will be capable of supporting AI initiatives.

Moving on, it is interesting that respect for intellectual property (IP) and copyright were considered the least important ethical factors among respondents. This may be because the use of AI for copyright protection is not yet widespread and has not been developed enough in Kazakhstan. As AI continues to develop in Kazakhstan, it will be important to raise awareness of the importance of intellectual property and tools to maintain customer trust.

When questioned about what artificial intelligence will mean for marketing companies, consumers, and society in the long run, participants shared a variety of responses. Respondent 1 claimed: "AI itself can contribute to a hugely competitive environment in which each of the subjects and producers will have to keep up with trends and adapt to the market's and people's needs." However, the same participant noted there is excessive misuse of artificial intelligence, which does not give a clear assessment of the productivity of employees and the enterprise as a whole. The results demonstrate two things: firstly, integrating AI into work processes will encourage companies to improve their brand through competition, which can positively impact their services. Secondly, using artificial intelligence should be thoughtful and careful, as this may affect the quality of the work performed.

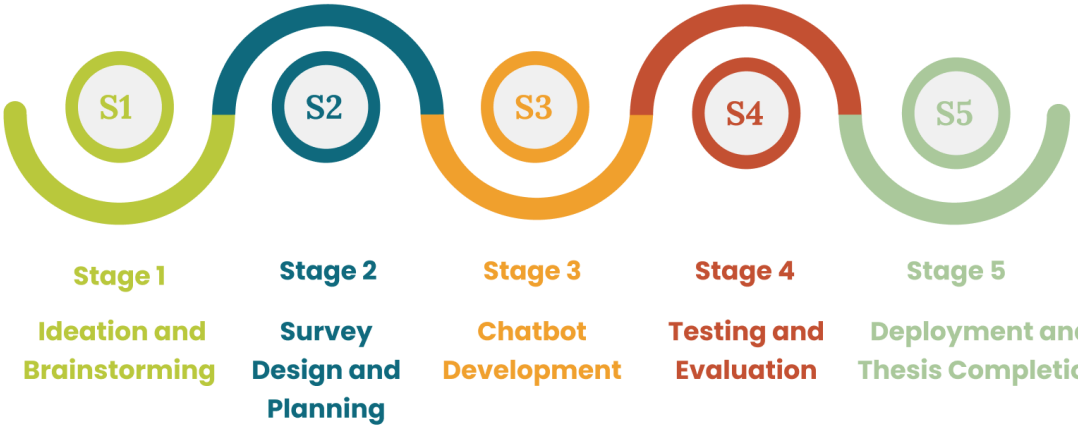
Respondent 2 said that AI will have a positive impact, as the costs for the same operations will decrease and the work process will be significantly accelerated. On the contrary, respondent 3 expressed concern that lower costs and increased productivity might lead to unemployment. Nevertheless, the participant pointed out that retraining workers or introducing the "Basics of AI" into compulsory secondary education is essential.

Finally, we obtained evidence that AI chatbots are effective tools for businesses to increase customer satisfaction and operational efficiency, and the introduction of AI into marketing strategies has a positive effect on the competitiveness of companies in Kazakhstan, which confirms the hypotheses (H1) and (H2) outlined in this research paper.

6. Description of the IT product

This product was created to optimize the process in the company and businesses. Using a chatbot to work with clients increases the number of sales by quickly responding to customer requests, and also supports the company's image among competitors. In addition, as previously mentioned, the work of AI in Kazakhstan is evaluated at a high level, which shows us how AI has become a popular tool in marketing. The chatbot is attractive because it easily adapts to any business, depending on the idea of the project.

Roadmap



Note. Adapted from Figma Community, n.d. Copyright 2024 by Figma.

The first stage of product development was the development of ideas and brainstorming, during which research questions and hypotheses about the integration of AI into Kazakhstani marketing were formulated. The motivation for the research was due to the rapid digitalization of Kazakhstan's economy and investments in AI in the country. In the second stage, we conducted an anonymous survey among Kazakhstani companies about the preferences of companies regarding the integration of artificial intelligence into their business practices. Therefore, we conducted an extensive literature review to identify current trends and the potential of artificial intelligence. At this stage, we discovered that an AI chatbot is a preferable technology for businesses. Then we started developing a chatbot for which a suitable artificial intelligence was selected. The next step was to test and evaluate the chatbot, where we

discovered some details for future improvements. The final stage includes the deployment of a chatbot and the completion of a thesis.

Chatbot features

We used Telegram messenger as the basis for our chatbot, as Telegram is famous for its high-quality security level and in addition, this application is user-friendly and available for all types of platforms, including iOS, Android, Windows, macOS, and even through web browser. We used SQL for the database, Structured Query Language (SQL) is a programming language used for database management (Mansurova, 2023). Its main functions are to extract, update, insert, and delete existing data. We extract information about books from the Flip.kz marketplace. The reason of choosing Flip due to its popularity and wide range of products (Flip.kz, n.d.). We receive information about books from the Flip website.kz marketplace. In a chatbot, this programming language allows you to interact with a database with information already available.

The BookBot project is a chatbot for Telegram. The chatbot is fully developed in Python 3.8, and this programming language provides all the features and amenities for creating similar projects. During the development phase, several libraries were used for advanced functionality (Image1). Such as:

‘Requests' - used to make HTTP requests to various web resources.

‘Beautifulsoup' parses the pages' HTML code using search, navigation, and data extraction methods.

'Gemini AI API’ is a Google AI model that allows text generation based on questions or queries (Datacamp, 2024).

‘python-telegram-bot' - used to work with the Telegram API and create a chatbot.

‘Aiogram’ is a bot that helps to interact with Telegram API. This bot processes messages and also monitors the status of the message regularly (Joury, 2022).

We also used the ‘SQLite’ library, which in turn implements an autonomous and serverless SQL database engine (Van Baaren, 2024).

In addition, the chat was created using the BotFather server, located directly in the telegram, specially designed to create and control chatbots. This account has provided a platform for users to interact with a chatbot.

Image 1

```
import os
import logging
import requests
from bs4 import BeautifulSoup
import google.generativeai as genai
from aiogram import Bot, Dispatcher, types
from aiogram.utils.executor import start_polling
from aiogram.types import InlineKeyboardButton, InlineKeyboardMarkup
import sqlite3
from datetime import datetime
```

This part of the code (Image 2) retrieves the available Google API key and credential path. Then we use the ‘Gemini-pro’ model for generating content.

Image 2

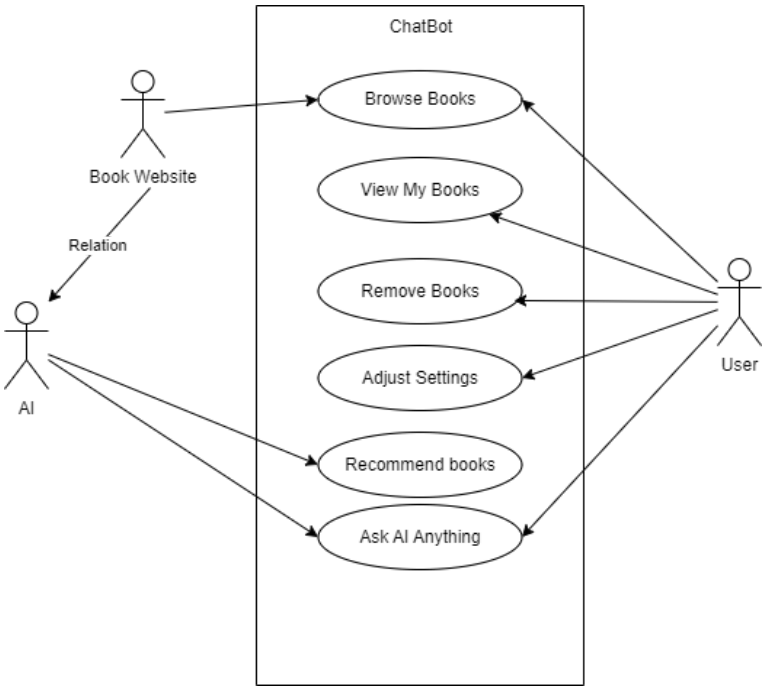
```
GOOGLE_API_KEY = os.getenv('GOOGLE_API_KEY')
GOOGLE_APPLICATION_CREDENTIALS = os.getenv('GOOGLE_APPLICATION_CREDENTIALS')

if not GOOGLE_API_KEY or not GOOGLE_APPLICATION_CREDENTIALS:
    raise EnvironmentError("Google API key or credentials not set. Please set GOOGLE_

genai.configure(api_key=GOOGLE_API_KEY)
model = genai.GenerativeModel('gemini-pro')
```

In this part of the code below (Image 3), the chatbot parses data from the website Flip.kz. Based on the data entered by the user, the chatbot extracts information about a particular book, providing its title, description, and link to the book.

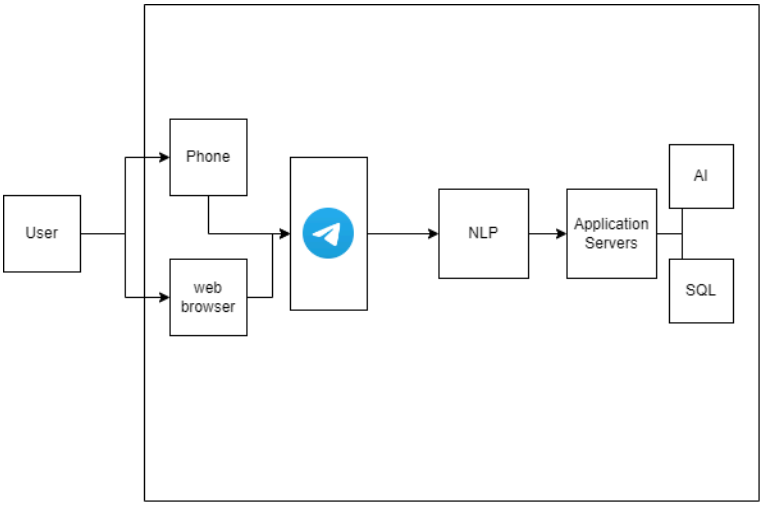
Image 3

```python
def search_books_on_website(query):
    query = requests.utils.quote(query)
    search_url = f"https://www.flip.kz/search?search={query}&subsection=1"
    response = requests.get(search_url)
    if response.status_code == 200:
        soup = BeautifulSoup(response.text, 'html.parser')
        product_data_divs = soup.find_all('div', class_='product-data')
        books_found = []
        for div in product_data_divs:
            book_info = {}
            a_tag_title = div.find('a', class_='title')
            if a_tag_title:
                book_info['title'] = a_tag_title.text.strip()
                book_info['link'] = f"https://www.flip.kz{a_tag_title.get('href', '')}"
            div_description = div.find('div', class_='description')
            if div_description:
                book_info['description'] = div_description.get_text(strip=True)
            books_found.append(book_info)
        return books_found
    else:
        return []
```

User case diagram



The use case diagram shows us the user's interaction with the bot. This diagram indicates that during interactions between the sites from which the corresponding book data is received, the AI processes this information through a request from the user and implements its recommendation and an additional text that describes the product in more detail. As can be seen from the diagram, the user can use all the functions, such an interaction model simplifies the search and demonstrates the key moment of user requests from external sources.



Architecture of the chatbot

The architecture of the chatbot represents a structured structure that defines how the system of our chatbot works in general. This diagram expands the possibilities of using a chatbot, thereby showing that it can be more than just a Bookbot. Also, the clear architecture of the chatbot makes it possible to easily maintain and update the system, this will greatly help developers to understand the data flow and the logic of the bot. The diagram shows how a user can log in to Telegram Messenger from any device without requiring a server for this, which guarantees its integration with various systems. An example of this is the AI and API. In addition, the connection between NLP and AI guarantees us the work of the bot, which leads to the database.

7. Challenges and Ethical Considerations

Regardless of the benefits that AI can bring to marketing, there are some potential challenges, and ethical considerations should be taken into account. The increase in the use of AI in business strategies contributes to the emergence of more and more ethical principles of AI, according to Stanford's University Artificial Intelligence Index Report (2021). The study found that since 2015, there has been a noticeable increase in articles containing keywords related to AI ethics, such as "transparency," "privacy," "security," "and accountability" (Stanford University, 2021). These findings are also reflected in the review of the study, which highlights the growing attention to ethical issues in the field of AI among companies in Kazakhstan. These companies pay attention to ethical issues such as

protecting data privacy, preventing the unfair use of AI to manipulate or spread disinformation, transparency in the use of technology, and respecting intellectual property and copyrights.

Therefore, there are potential risks associated with information bias due to limited or distorted data. Therefore, careful supervision by employees is necessary to meet the needs of each company (Chui et al., 2023).

According to a Chui et al. report, using AI tools based on publicly available data may violate intellectual property rights, as there are no guarantees against copyright infringement (2023). The case of Under Armour, a sportswear brand, is a striking example of an issue involving plagiarism in which AI was involved. The Under Armour advertisement was created solely by artificial intelligence. However, the new advertisement has caused criticism from industry professionals who have expressed concern about copyright issues and the need for more precise regulation in such cases. (Chadwick, 2024). The case shows that relying only on AI to produce content may lead to copyright issues since AI is a relatively new technology.

For this reason, the introduction of artificial intelligence into marketing strategies requires careful consideration, especially from the point of view of protecting customer data and carefully examining the content of the product to avoid plagiarism when using artificial intelligence technologies.

8. Limitations

During the study, some limitations were discovered that should be taken into account in the further study and practical application of the results. The study was conducted on a sample of 71 participants, which is relatively small and may limit the possibility of generalizing the results. The questionnaire was distributed online via Google Forms, and all information about the respondents was anonymous. This means that we do not know the exact identity of the participants, but the questionnaire was sent to companies and startups in Kazakhstan. It is important to note that there is a possibility that several employees from the same company answered the survey, which may mean that 71 is not the number of companies. Additionally, the data was collected based on self-reports, which may lead to

response bias, even though the participants were asked to openly express their opinions on AI integration in Kazakhstan. This may be because participants might give answers they consider socially acceptable. Moreover, the method chosen in the research may only partially cover all questions to investigate the topic. This approach limits the possibility of taking into account the personal preferences of the participants and, accordingly, affects the results of the study.

In the future, instead of relying solely on start-ups and marketing companies, we want to expand our research to include a broader and more diverse group of participants from various organizations, industries, and geographical regions of Kazakhstan. In addition, the problem of this study is the lack of previous scientific papers that dealt with this topic in Kazakhstan, which makes it difficult to conduct a comparative analysis. Time constraints are also important limitations that can affect the scope and depth of analysis when studying AI marketing in Kazakhstan.

Finally, these limitations should be taken into account when interpreting the results for future studies. Further research is needed to establish a wider and more diverse sample size to gain a more complete understanding of AI in marketing.

9. Conclusion

The present research aimed to examine the potential of AI integration into marketing campaigns in Kazakhstan. In order to achieve the research goals and confirm the hypotheses, the literature on the use of artificial intelligence in marketing was thoroughly studied, as well as a survey was conducted among companies in Kazakhstan. This is an important conclusion for understanding the readiness of Kazakhstani companies to integrate artificial intelligence into their business strategies. The replies received from participants indicate that chatbots are the most popular AI tools in marketing strategies due to their ability to provide instant and personalized responses. The participants noted that the use of artificial intelligence increases efficiency by optimizing processes and more accurately personalizing marketing campaigns.

The introduction of AI into marketing strategies can be very profitable, as it is one of the most promising areas for applying technological innovations. We believe that in addition to finding the benefits of implementing artificial intelligence, future research should carefully examine potential problems and the ethical aspects of using AI. In conclusion, AI tools are transforming the way businesses operate and interact with customers. AI technologies offer many opportunities: companies can use them to automate routine tasks, optimize business processes, and develop content.

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Appendix 1

Survey

Closed questions:

1. Are you familiar with the artificial intelligence (AI) concept?
    - Very familiar
    - Familiar
    - Somewhat familiar
    - Unfamiliar
    - Very unfamiliar
2. Have you ever used AI-powered applications before? Example: chatbots (ChatGPT); virtual assistants like Siri (Apple), Google Assistant (Google), and Bixby (Samsung); streaming services like Netflix, and Spotify to recommend personalized content
    - Yes
    - No
3. How likely are you to explore AI-powered tools for your marketing strategies in the future?
    - Very likely
    - Likely
    - Neutral
    - Unlikely
    - Very unlikely
4. Do you believe that the use of artificial intelligence is necessary for competitiveness in Kazakhstan?
    - Yes
    - No
    - Other (please specify)

5. In your opinion, what impact AI integration could have on the competitiveness of companies in the Kazakhstani market?
    - Positive impact
    - Neutral impact
    - Negative impact
    - Other (please specify)
6. Have you explored AI-driven solutions offered by local vendors or startups in Kazakhstan?
    - Yes
    - No
7. How satisfied are you with the current level of AI technology available for marketing purposes in Kazakhstan?
    - Very satisfied
    - Satisfied
    - Neutral
    - Dissatisfied
    - Very dissatisfied
8. Which of the following AI-powered tools do you currently use or plan to use in your marketing strategies? (Select all that apply)
    - Chatbots
    - Predictive analytics
    - Personalization engines
    - Content generation algorithms
    - Other (please specify)
9. How do you perceive the potential benefits of AI integration in improving marketing efficiency? (Select all that apply)
    - Cost reduction

- Increased productivity
- Enhanced targeting capabilities
- Improved customer engagement
- Other (please specify)

10. How likely are you to invest more resources into AI integration for your marketing strategies?
    - Very likely
    - Likely
    - Neutral
    - Unlikely
    - Very unlikely
11. How do you perceive the readiness of Kazakhstani consumers to interact with AI-powered marketing initiatives?
    - Highly receptive
    - Somewhat receptive
    - Neither satisfied nor dissatisfied
    - Somewhat resistant
    - Highly resistant
12. What are the primary obstacles you perceive in adopting AI in your marketing efforts in Kazakhstan? (Select all that apply)
    - Lack of expertise or knowledge
    - Budget limitations
    - Concerns about data privacy and security
    - Resistance from stakeholders
    - Regulatory barriers
    - Other (please specify)

13. Which of the following ethical considerations do you believe are most crucial when implementing AI in marketing strategies? (Select all that apply)
    - Confidentiality and data protection
    - Misuse of artificial intelligence for manipulation or disinformation
    - Transparency
    - Respect for intellectual property and copyright
    - Other (please specify)
14. Is government support important for introducing artificial intelligence technologies in Kazakhstan's digital marketing?
    - Strongly Agree
    - Agree
    - Neutral
    - Disagree
    - Strongly Disagree

Open-ended question:

1. What do you think artificial intelligence will mean for marketing companies, consumers, and society in the long run?